# **Maryland Statewide Digital eLearning Accessibility Guidelines**

## Statewide IT Accessibility Initiative

The Maryland Department of Disabilities Information Technology (IT) Accessibility Initiative supports state agencies to meet Maryland's Non-Visual Access standards. The IT Accessibility Initiative's purposes are to improve policies and practices in state IT procurement and ensure equal access to state agency information technology for residents with disabilities. Please reach out to the IT Accessibility Initiative for questions, support, or consultations.

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## Scope and Application

The intention of the eLearning accessibility guidelines is to provide eLearning developers and agency training managers with specific guidance on how to comply with state and federal accessibility standards and provide non-visually accessible means to obtain the presented information. The guidelines included are in accordance with the Web Content Accessibility A and AA guidelines and are in line with Title II of the Americans with Disabilities Act and the current state standard. Some guidelines here are marked as best practice and should be considered optional.

##

## **Understanding Guideline Criteria**

These guidelines follow the Web Content Accessibility Guidelines (WCAG) 2.1 Levels A and AA. WCAG organizes its success criteria into three conformance levels: A, AA, and AAA. This tiered system helps organizations prioritize accessibility efforts based on impact and feasibility, providing a clear implementation roadmap for new creators.

* **Level A (Minimum Conformance - Most Critical):** This is the most basic level of accessibility. The success criteria at Level A are designed to address the most critical and severe barriers that would prevent many users with disabilities from accessing content at all. These are considered essential requirements and are often the easiest to implement without significantly impacting course design or structure. If an eLearning course does not meet Level A criteria, it has serious accessibility issues. Examples include providing text alternatives for images and ensuring keyboard-only navigation.
* **Level AA (Recommended Conformance - Required):** This level includes all Level A criteria plus an additional set of requirements that address more nuanced but still significant barriers. Conforming to Level AA ensures a comprehensive level of accessibility that works for most users on most devices. This guide will focus on providing the knowledge needed to achieve Level AA conformance. Examples include meeting minimum color contrast ratios and providing proper headings and labels.
* **Level AAA (Highest Conformance - Suggested):** This is the highest and most stringent level of accessibility and is suggested but not required for compliance with Title II. It includes all Level A and AA criteria, plus additional requirements that further enhance the user experience, often for very specific user groups. One example is to write all content in plain language.

# **eLearning Accessibility Guidelines**

## **Requirements**

### **Provide Manual Navigation**

By default, navigation within a module — e.g., moving from one slide to another; opening and closing layers; etc. — should occur as a result of manually-input user commands, such as clicking a button, executing a keyboard shortcut, or using a slide menu.

#### WCAG Guideline(s)

* [2.2.2 Pause, Stop, Hide (A)](https://www.w3.org/WAI/WCAG21/Understanding/pause-stop-hide)
* [3.2.1 On Focus (A)](https://www.w3.org/WAI/WCAG21/Understanding/on-focus)
* [3.2.2 On Input (A)](https://www.w3.org/WAI/WCAG21/Understanding/on-input)

### **Provide and/or inform learners of a mechanism to bypass blocks of content**

Mechanisms should be provided to allow learners to skip past content that is repeated throughout a module. In many authoring tools, these mechanisms will be provided by the tool; you just have to inform learners of their function so they can be reliably used (*Example: Storyline provides a Back to Top button at the end of the focus order*).

#### WCAG Guideline(s)

* [2.4.1 Bypass Blocks (A)](https://www.w3.org/WAI/WCAG21/Understanding/bypass-blocks)

### **Provide clear instructions for interactivity and other unique engagement**

Provide corrective feedback when learners fail to engage as intended (e.g., when learners submit a quiz question without selecting an answer choice first). Use headings, labels, notes and other approaches to help learners understand what they encounter and what they need to do within a module (*Example: Provide instructions such as “Select each option to continue”*).

This standard pertains to more "micro" environments, like individual slides and interactions.

#### WCAG Guideline(s)

* [3.3.2 Labels or Instructions (A)](https://www.w3.org/WAI/WCAG21/Understanding/labels-or-instructions)
* [3.3.3 Error Suggestion (AA)](https://www.w3.org/WAI/WCAG21/Understanding/error-suggestion)

### **Allow for spacing and style customization, as well as robust assistive technology integration**

Learners must be able to customize spacing and other style properties using browser extensions or custom style rules. Learners also need to be able to use a broad array of assistive technologies and features, such as high contrast modes (*Example: Storyline 360 player has Accessible Text option. Ensure this option is available in player*).

#### WCAG Guideline(s)

* [1.4.12 Text Spacing (AA)](https://www.w3.org/WAI/WCAG21/Understanding/text-spacing)

### **Ensure assistive technology users can operate all aspects of the module**

Screen reader users and learners who rely on their keyboard or other adaptive control devices (instead of using a mouse/trackpad) must be able to equivalently operate all aspects of a module, including controls for embedded media.

Ensure all interactive elements can receive tab focus, can be controlled equivalently through assistive technologies and are properly announced by commonly-used screen readers in all ways they can be accessed (e.g., accessed by reading linearly, accessed by tabbing through interactive elements and accessed through structure type-specific commands).

Do not employ elements or processes that rely on use of a mouse/trackpad and sight (e.g., a drag-and-drop interaction that cannot also be operated by selecting drag objects and then drop locations; hover states that reveal essential information; hotspots that lack pre-defined selection areas; etc.).

#### WCAG Guideline(s)

* [2.1 Keyboard Accessible (A)](https://www.w3.org/WAI/WCAG21/Understanding/keyboard)
* [4.1.2 Name, Role, Value (A)](https://www.w3.org/WAI/WCAG21/Understanding/name-role-value)
* [1.3.1 Info and Relationships (A)](https://www.w3.org/WAI/WCAG21/Understanding/info-and-relationships)
* [1.4.13 Content on Hover or Focus (AA)](https://www.w3.org/WAI/WCAG21/Understanding/content-on-hover-or-focus)

### **Provide equivalent information, structure and relationships**

Any information, structure and/or relationships that can be perceived visually need to be programmed, or captured in textual manner, in a way that allows assistive technology users to access and interpret the same information, structure and/or relationships (*Example: Use authoring tool’s native settings for creating lists, headings, etc.*).

#### WCAG Guideline(s)

* [1.3.1 Info and Relationships (A)](https://www.w3.org/WAI/WCAG21/Understanding/info-and-relationships)

### **Logical reading order / tab order / focus order**

Ensure content is sequenced for assistive technologies in the order that best enables learners to understand the content and engage with it (*Example: Use Storyline Focus Order tool to make sure keyboard and screenreader reads in a logical order*).

#### WCAG Guideline(s)

* [1.3.2 Meaningful Sequence (A)](https://www.w3.org/WAI/WCAG21/Understanding/meaningful-sequence)
* [2.4.3 Focus Order (A)](https://www.w3.org/WAI/WCAG21/Understanding/focus-order)
* [1.3.1 Info and Relationships (A)](https://www.w3.org/WAI/WCAG21/Understanding/info-and-relationships)

### **Ensure screen reader users are alerted to important changes within a slide/environment**

In order to ensure they have an equivalent experience, screen reader users need to be alerted to certain events occurring within a slide, such as layers opening, content being revealed, buttons becoming available or changing state, etc. These alerts can be provided in the form of automatic screen reader announcements or audio cues (*Example: Use sounds and alerts when new buttons or layers appear*).

#### WCAG Guideline(s)

* [4.1.3 Status Messages (AA)](https://www.w3.org/WAI/WCAG21/Understanding/status-messages)
* [2.4.3 Focus Order (A)](https://www.w3.org/WAI/WCAG21/Understanding/focus-order)
* [3.2.2 On Input (A)](https://www.w3.org/WAI/WCAG21/Understanding/on-input)
* [4.1.2 Name, Role, Value (A)](https://www.w3.org/WAI/WCAG21/Understanding/name-role-value)

### **Avoid Time Limits**

Do not impose time limits on activities (as it may naturally take longer for assistive technology users and/or learners with certain disabilities to engage with parts of a module). If a time limit enhances an experience for certain learners, provide it as an option learners can self-select.

If a time limit is essential to an activity, learners should be informed of the time limit before beginning the activity and, ideally, should be able to access accommodations within the module itself, such as by having the option of choosing a version of the activity that does not have a time limit and possibly, as well, additional versions with longer time limits (e.g., 2x or 4x the default time limit) or time limits that learners can assign themselves.

#### WCAG Guideline(s)

* [2.2.1 Timing Adjustable (A)](https://www.w3.org/WAI/WCAG21/Understanding/timing-adjustable)

### **Allow learners to easily restart slides and pop-ups/layers that contain media**

Due to the time-consuming nature of scrubbing media backwards using keyboard controls (compared with the relative ease of doing so with mouse), learners should be able to easily restart, from their beginning, slides and slide pop-ups/layers that contain audio, video or timed events (*Example: In Storyline, set layers to ‘Reset to initial state’ in slide properties or provide replay/restart option).*

#### WCAG Guideline(s)

* [2.1.1 Keyboard (A)](https://www.w3.org/WAI/WCAG21/Understanding/keyboard)

### **Give each slide a unique title**

Giving each slide a unique slide title/name helps learners differentiate slides. Using the same title/name for a slide consistently throughout a module helps learners find that slide and avoid potential confusion.

Programming slide titles as headings is likely necessary per WCAG 1.3.1 and will provide screen reader users with a valuable means for quickly moving focus back to the start of the slide.

#### WCAG Guideline(s)

* [1.3.1 Info and Relationships (A)](https://www.w3.org/WAI/WCAG21/Understanding/info-and-relationships)
* [2.4.2 Page Titled (A)](https://www.w3.org/WAI/WCAG21/Understanding/page-titled)
* [2.4.6 Headings and Labels (AA)](https://www.w3.org/WAI/WCAG21/Understanding/headings-and-labels)

### **Use descriptive link text**

Learners should be able to understand a link's purpose from the link text alone.

Avoid using "click here" or "learn more" on their own as link text or similarly generic or ambiguous phrases that don't convey a link's purpose or destination. Avoid using URLs as link text, and do not use the same exact link text for more than one link within a slide/environment unless all links using that link text direct to the same destination.

#### WCAG Guideline(s)

* [2.4.4 Link Purpose (In Context) (A)](https://www.w3.org/WAI/WCAG21/Understanding/link-purpose-in-context)

### **Ensure buttons are presented in a way that makes clear their purpose/function and, if applicable, status**

When using buttons, make sure their purpose/function is clearly communicated, especially to screen reader users. For some buttons, the button text alone can achieve this standard, but with other buttons, you may need to utilize button alt text or a text label encountered before the button.

If buttons have multiple states/statuses — like unselected/selected, unvisited/visited, etc. — those statuses must also be conveyed, to screen reader users and visually by a means other than just color.

#### WCAG Guideline(s)

* [4.1.2 Name, Role, Value (A)](https://www.w3.org/WAI/WCAG21/Understanding/name-role-value)
* [1.1.1 Non-text Content (A)](https://www.w3.org/WAI/WCAG21/Understanding/non-text-content)
* [2.5.3 Label in Name (A)](https://www.w3.org/WAI/WCAG21/Understanding/label-in-name)
* [2.4.6 Headings and Labels (AA)](https://www.w3.org/WAI/WCAG21/Understanding/headings-and-labels)

### **Ensure Content Can Be Resized without Breaking**

Learners must be able to zoom the course content up to 400% without loss of content or functionality, and without requiring horizontal scrolling. This is crucial for learners with low vision. Most modern eLearning players handle this, but custom-built interactions must be tested.

#### WCAG Guideline(s)

* [1.4.10 Reflow (AA)](https://www.w3.org/WAI/WCAG21/Understanding/reflow)
* [1.4.4 Resize Text (AA)](https://www.w3.org/WAI/WCAG21/Understanding/resize-text)

### **Do not use color as the sole means of conveying information**

Make sure to incorporate at least one other easily perceivable visual characteristic (e.g., text, icons, etc.) that conveys the same information you're conveying through use of color.

#### WCAG Guideline(s)

* [1.4.1 Use of Color (A)](https://www.w3.org/WAI/WCAG21/Understanding/use-of-color)
* [1.3.3 Sensory Characteristics](https://www.w3.org/WAI/WCAG21/Understanding/content-on-hover-or-focus)

### **Ensure sufficient contrast between foreground content intended to be read or used and the background behind it**

"Large text" (at least 14pt/19px in size and bold; or at least 18pt/24px in size) and non-text elements must achieve 3:1 contrast. "Normal text" (any text that is not large text) must achieve 4.5:1 contrast.

Ensure these contrast requirements are met for all element states: e.g., hover, down, selected, visited, etc.

#### WCAG Guideline(s)

* [1.4.3 Contrast (Minimum) (AA)](https://www.w3.org/WAI/WCAG21/Understanding/contrast-minimum)
* [1.4.11 Non-text Contrast (AA)](https://www.w3.org/WAI/WCAG21/Understanding/non-text-contrast)

### **Ensure that learners’ ability to understand and operate a module does not solely rely on sensory characteristics**

Learners should be able to fully operate a module and fully understand its instructions and material even if they have difficulty perceiving sensory characteristics like shape, color, size, visual location, orientation and sound. If you incorporate any such sensory characteristics into a module's instructions, material or operations, make sure to simultaneously provide another means for perceiving, understanding and, if necessary, operating the module that does not rely on sensory characteristics.

#### WCAG Guideline(s)

* [1.3.3 Sensory Characteristics (A)](https://www.w3.org/WAI/WCAG21/Understanding/sensory-characteristics)

### **Ensure Consistent Navigation and Identification**

Navigational elements that are repeated across multiple "pages" or slides (like "Next," "Back," or a "Resources" menu) must appear in the same relative order each time. Components that have the same function (e.g., an icon for "more information") must be identified consistently.

#### WCAG Guideline(s)

* [3.2.3 Consistent Navigation (AA)](https://www.w3.org/WAI/WCAG21/Understanding/consistent-navigation)
* [3.2.4 Consistent Identification (AA)](https://www.w3.org/WAI/WCAG21/Understanding/consistent-identification)

### **Provide descriptions of non-decorative visual elements**

Assign succinct, descriptive alt text to non-decorative visual elements. If a slide has audio, it's recommended that the audio describe important visuals and/or their key takeaways so visually impaired learners can have a more equivalent experience (i.e., learners without vision disabilities can simultaneously consume both the audio information and the information conveyed through the graphic's visual appearance, so learners with vision disabilities should also be able to access both types of information simultaneously).

However, keep in mind that alt text is not a good method for sharing large amounts of information (e.g., 150-300 characters or more), as screen readers are limited in the ways they can read alt text, compared to body text.

#### WCAG Guideline(s)

* [1.1.1 Non-text Content (A)](https://www.w3.org/WAI/WCAG21/Understanding/non-text-content)
* [1.2.1 Audio-only and Video-only (A)](https://www.w3.org/WAI/WCAG21/Understanding/audio-only-and-video-only-prerecorded)
* [1.3.1 Info and Relationships (A)](https://www.w3.org/WAI/WCAG21/Understanding/info-and-relationships)

### **Do not convey information through hover or down states**

Assistive technologies cannot activate hover and down states, so they should not be used to provide information (*Example:* *Do not utilize hotspot interactions that are only operable via mouse*).

#### WCAG Guideline(s)

* [2.1 Keyboard Accessible (A)](https://www.w3.org/WAI/WCAG21/Understanding/keyboard)
* [1.4.13 Content on Hover or Focus (AA)](https://www.w3.org/WAI/WCAG21/Understanding/content-on-hover-or-focus)

### **All audio/video in courses must be captioned**

Provide captions for all narration or other audio or video content.

#### WCAG Guideline(s)

* [1.2.2 Captions (Prerecorded) (A)](https://www.w3.org/WAI/WCAG21/Understanding/captions-prerecorded)

### **Avoid flicker or strobe effects**

Strobing, flickering or flashing effects can trigger seizures or discomfort, so ensure that no content flashes more than three times per second or otherwise this would violate WCAG 2.3.1.

Keep in mind that certain animated content, even if it doesn't exceed the WCAG 2.3.1 thresholds, may impede the experience of learners who have certain cognitive disabilities, vision disabilities and vestibular disorders (e.g., vertigo), so be mindful in how you deploy such effects, and avoid utilizing them during moments when critical information is being shared.

#### WCAG Guideline(s)

* [2.3.1 Three Flashes or Below Threshold (A)](https://www.w3.org/WAI/WCAG21/Understanding/three-flashes-or-below-threshold)
* [2.2.2 Pause, Stop, Hide (A)](https://www.w3.org/WAI/WCAG21/Understanding/pause-stop-hide)

## **Best Practices**

This section refers to recommendations that may increase accessibility however they are not required specifically in accordance with Title II of the ADA.

### **Provide easy-to-access accessibility instructions (in addition to general user instructions)**

Accessibility instructions for navigation and interactivity should be made available to learners before they open a module (in case they encounter barriers opening the module or reading far into it). Accessibility instructions should also be provided as early as possible within a module and should be easy for learners to access from anywhere within a module.

### **Use Plain Language**

Strive to convey ideas clearly and concisely, with simple sentence structure that facilitates readability and comprehension. Explain any jargon, acronyms or abbreviations used.

Explain, or avoid using, figures of speech, idioms, slang and other sayings that might not be understood by broad audiences that include individuals who have different first languages and/or cultural backgrounds.

### **Use Inclusive Language**

Write instructions and calls to action using language that is independent of any specific device or input method. Avoid verbs that assume how a user is interacting with the content, as learners may use a mouse, keyboard, touchscreen, voice commands, or other assistive technologies.

For example, instead of instructing learners to "Click the Next button," use a more universal verb like "Select" or "Choose." Similarly, use "Go to" or "Navigate to" the next section rather than "View the next section," as the latter presumes a visual interaction that may not apply to screen reader users. This ensures your instructions are clear and actionable for everyone, regardless of how they operate the course.

## **How to Test for Accessibility**

Before delivering a course, perform these simple tests:

1. **The Keyboard Test:** Unplug your mouse. Can you navigate to and operate every single button, link, and interactive element using only the Tab key (and Shift+Tab to go backward), arrow keys, and the Enter or Spacebar keys? Can you see a visible box (focus indicator) around the element you are currently on?
2. **The Contrast Test:** Use a free color contrast checking tool (like the [TPGi Colour Contrast Analyser](https://www.tpgi.com/color-contrast-checker/) or a browser extension) to test the text and background colors in your course. Check all button states (hover, selected).
3. **The Zoom Test:** In your browser, zoom the page to 400%. Is all the text still readable without having to scroll horizontally?
4. **The Screen Reader Test:** Download a free screen reader like [NVDA](https://www.nvaccess.org/download/) and listen to your course. Is the reading order logical? Are images described? Do you know the purpose of each button? For best results, have native screen reader users test the content with a screen reader themselves.